equivalent to the unit of mrem/yr for tissue. The portion of the background dose from the internally deposited, naturally-occurring radionuclides and from the inhalation of radon and its daughters were estimated as 40 mrem/yr and 200 mrem/yr, respectively, using the approximations by the National Council on Radiation Protection (NCRP, 1996) (Figure 8-3).
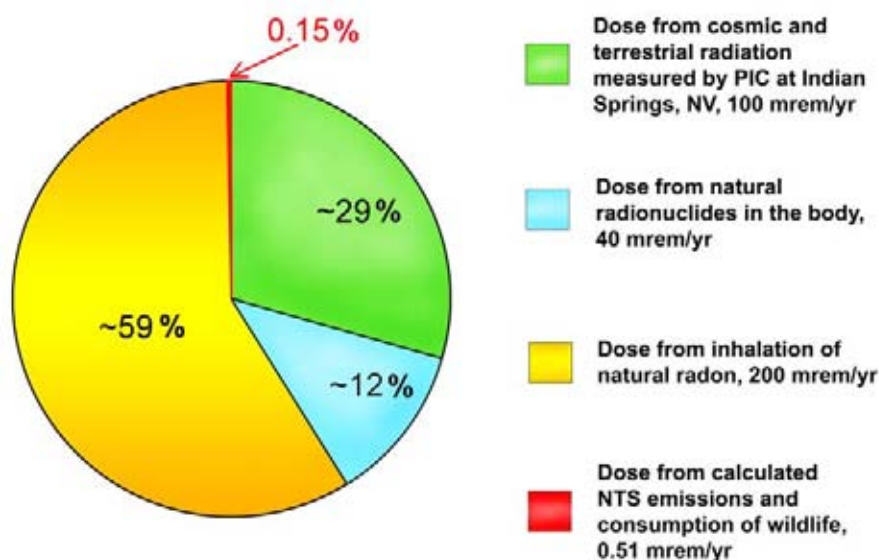

Figure 8-3. Comparison of radiation dose to the MEI and the natural radiation background (percent of total)

8.1.7   Collective Population Dose

Approximately 43,000 persons live within an 80-km radius of the NTS (Hardcastle, 2005). The collective population dose (see Glossary, Appendix D) from NTS operations is the sum of the CEDEs to all individuals within the 80-km radius of the NTS (see Figure 8-1). The dose calculation does not include those working onsite. It is intended to calculate doses to residents at their homes. The 2004 collective population dose attributable to NTS operations to persons living within 80 km of the NTS was estimated to be 0.47 person-rem/yr (Table 8-6). This population dose is comparable to the population dose of 0.45 person-rem reported for 2003 (DOE, 2004d).

Table 8-6. Radiological dose to the general public from 2004 NTS operations

Pathway	Dose to Maximally Exposed Individual (mrem/yr)	(mSv/yr)	Percent of DOE 100-mrem/yr Limit	Estimated Collective Population Dose[a] (person-rem/yr)	(person-Sv/yr)
Air	0.12	0.0012	0.12	0.47[a]	0.0047
Water	0	0	0	0	0
Wildlife	0.39	0.0039	0.39	U[b]	U
All Pathways	0.51	0.0051	0.51	0.47[c]	0.0047

(a) Sum of radiation doses from all emission sources at each populated location within 80 km of emission sources multiplied by the population at each location, and then summed over all locations.

(b) Unable to make this estimate due to a lack of data on number of game animals harvested near the NTS by hunters in 2004.

(c) The dose contribution from wildlife is not included. It is likely to be negligible when averaged over the entire population within an 80-km radius.